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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,381	11/12/2003	Moris Dovek	HT02-016	6373

7590 03/14/2007
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EXAMINER

KAYRISH, MATTHEW

ART UNIT	PAPER NUMBER
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2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/14/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/706,381	DOVEK ET AL.	
	Examiner	Art Unit	
	Matthew G. Kayrish	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 1/3/2007 have been fully considered but they are not persuasive.

Regarding the argument about the second surfaces, the examiner points out that the front surfaces of items 16 & 18 in figure 15 are opposed to the front surfaces of items 11 and 15 with regard to the contact surface between items 11 & 16 and 15 & 18. They are on opposing sides, therefore are opposing. Therefore, rejection stands.

Regarding the argument about the term abut. The examiner maintains that the nonmagnetic does abut the top part of the primary pole. Therefore, rejection stands.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1, 2, 4, 6 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Komuro et al (US Patent Number 6530141).

Regarding claim 1, Komuro et al disclose:

A magnetic write head, having an air bearing surface, comprising:

Upper (figure 15, item 11) and lower (figure 15, item 15) magnetic poles each having a first surface (figure 15, front of items 11 and 15), said first surfaces being parallel and non-opposing (figure 17);

Extending for an amount in a direction normal to said first surfaces, one ledge from each pole (figure 15, items 16 & 18), said ledges having second surfaces that are coplanar, parallel to, and opposed to, said first surfaces (figure 15);

Said ledges being separated from one another by a non-magnetic layer whereby a write gap is defined (figure 15, item 17);

Said ledges having a common width that defines a track width (column 13, lines 26-28);

Each ledge extending away from said write gap (figure 15, each of items 16 and 18 are extended away from the ABS) for a distance whereby most of said pole is set back some distance from said air bearing surface (figure 15, both poles [11 and 15] are set back from ABS) and therefore has little magnetic interaction therewith (columns 3 & 13, lines 12-16 & 36-42).

Regarding claims 2 and 9, Komuro et al disclose:

The write head described in claim 1 wherein said track width is between about 0.05 and 1 micron (column 6, lines 1-3).

Regarding claim 4, Komuro et al disclose:

A magnetic write head, comprising:

On a substrate, a first layer of high magnetic permeability material that serves as a primary lower magnetic pole (figure 15, item 15);

A non-magnetic layer that abuts, and extends away from, said primary pole on a first side (figure 15, item 14);

A second layer of high magnetic permeability material that serves as a secondary lower pole and covers said primary pole extending over said non-magnetic layer on said first side as a ledge having a width (figure 15, item 18);

A field coil over, and insulated from, said lower poles (figure 15, item 13);

An upper magnetic pole that overlies said field coil (figure 15, item 11), contacts said lower pole at a second side that opposes said first side (column 5, lines 23-29), and that is separated from said ledge by a layer of non-magnetic material that is a write gap (figure 15, item 17), said upper pole having, at the write gap, a width equal to said ledge width, whereby it defines a track width (column 13, lines 28 & 29);

Said ledge extending away from said primary lower pole by an amount (figure 15, item 18 extends from item 15).

Regarding claim 6, Komuro et al disclose:

The write head described in claim 4 wherein said non-magnetic layer is silicon oxide, aluminum oxide, tantalum oxide, Al, Rh, Ru, Cu, NiCu, or Ta (column 6, lines 8-12).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komuro et al, in view of Takano et al (US Patent Number 5850326).

Regarding claims 3 and 10, Komuro et al disclose the features of base claim 1 as noted in 102 rejection above, but fails to specifically disclose:

Wherein said amount that said ledges extend away from said poles is between about 0.1 and 1 micron.

Takano et al disclose:

Wherein said amount that said ledges extend away from said poles is between about 0.1 and 1 micron (figure 14, column 11, lines 39-41).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the ledges extend from the poles between about .1 and 1 micron, as taught by Takano et al, because this allows for accurately use focused ion beaming, which will make the recording of the signal stronger and more accurate, as stated by Takano et al in column 11, lines 37-49.

Claims 5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komuro et al, in view of Sasaki et al (US Publication Number 2003/0151849).

Regarding claim 5, Komuro et al disclose the features of base claim 4 as noted in 102 rejection above, but fails to specifically disclose:

Wherein said first layer of high magnetic permeability material is NiFe, CoNiFe, FeTaN, FeAlN, CoTa_N, CoAlN, or CoFeN and has a thickness between about 0.3 and 3 microns.

Sasaki et al disclose:

The write head described in claim 4 wherein said first layer of high magnetic permeability material is NiFe, CoNiFe, FeTa_N, FeAlN, CoTa_N, CoAlN, or CoFeN and has a thickness between about 0.3 and 3 microns (page 9, paragraph 124).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to fabricating the pedestal from this material with this thickness, because this thickness helps to increase the magnetic flux density, but these materials have a relatively low saturation level, therefore, the magnetic flux density is under more strict control for accurately recording data.

Regarding claim 7, Korumo et al fails to specifically disclose:

Wherein said second layer of high magnetic permeability material is NiFe, CoNiFe, FeTa_N, FeAlN, CoTa_N, CoAlN, or CoFeN and has a thickness between about 0.2 and 2 microns.

Sasaki et al disclose:

Wherein said second layer of high magnetic permeability material (paragraph 125, item 42) is NiFe, CoNiFe, FeTa_N, FeAlN, CoTa_N, CoAlN, or CoFeN and has a thickness between about 0.2 and 2 microns (page 9, paragraph 125).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to fabricate the second layer to a general thickness

relatively near that of the first layer, because this will provide for better interaction between the two layers which allows for a more accurate and precise control of the magnetic flux density.

Regarding claim 8, Korumo et al fails to specifically disclose:

Wherein said upper magnetic pole is NiFe, CoNiFe, FeTaN, FeAlN, CoTa₂N, CoAlN, or CoFeN and has a thickness between about 0.3 and 3 microns.

Sasaki et al disclose:

The write head described in claim 4 wherein said upper magnetic pole is NiFe, CoNiFe, FeTaN, FeAlN, CoTa₂N, CoAlN, or CoFeN and has a thickness between about 0.3 and 3 microns (page 11, paragraph 136).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to fabricating the pedestal from this material with this thickness, because this thickness helps to increase the magnetic flux density, but these materials have a relatively low saturation level, therefore, the magnetic flux density is under more strict control for accurately recording data.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew G. Kayrish whose telephone number is 571-272-4220. The examiner can normally be reached on 8am - 5pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

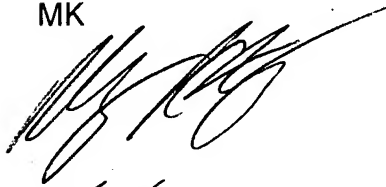
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Matthew G. Kayrish

3/5/2007

MK


3/5/2007
WAYNE YOUNG
SUPERVISORY PATENT EXAMINER